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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/007,884

11/09/2001

Joseph U. Han

5943

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7590

10/08/2003

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EXAMINER

GORMAN, DARREN W

ART UNIT

PAPER NUMBER

3752

DATE MAILED: 10/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/007,884

Applicant(s)

HAN ET AL.

Examiner

Darren W Gorman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 7 and 18 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-13 is/are allowed.
- 6) ☒ Claim(s) 1-6, 14, 15, 17, 19, 21, and 22 is/are rejected.
- 7) ☒ Claim(s) 16 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of species Group I in Paper No. 3 is acknowledged. The traversal is on the ground(s) that species of Group II, identified in Figure 13, does not relate to such distinct and separate inventive substance that Applicant should be required to prosecute any separate application relative thereto, and that all originally submitted claims may be properly examined concurrently. This is not found persuasive because Applicant clearly discloses species, which are patentably distinct. If Applicant is aware of a search, which would encompass both species disclosed in the application, Applicant is required to provide that search and any related references.

The requirement is still deemed proper and is therefore made FINAL.

Further, Applicant has identified claims 1-6, 8-10, and 12-18 as being readable on the elected species. However, this Office believes that claims 1-6, 8-10, 12-17, and 19-22 are readable on the elected species of Group I, claims 7, 11, and 18 being readable on non-elected species of Group II.

2. Claim 11, directed to the species of non-elected Group II is not withdrawn from further consideration since claim 11 depends upon or otherwise includes each of the limitations of an allowed generic claim as required by 37 CFR 1.141.

3. Claims 7 and 18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim.

Applicant timely traversed the restriction (election) requirement in Paper No. 3.

Drawings

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "24" has been used to designate two both an inclined surface of the nozzle passage and an upper portion of the nozzle device in Figures 10 and 12. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Minor Claim Suggestions By Examiner

5. The body of the claims of the present invention is understood by the Examiner, however the following changes are recommended to improve clarity. The claims have been examined on the merits including the suggested changes below.

In claim 1, on line 16, --surface-- should be inserted between "reflector" and "is".

In claim 6, lines 2-3 should be amended as follows: "the reflector surface is generally convex, and wherein variations in the generally convex reflector surface [of the generally convex reflector surface] reflect respective portions of spray at".

In claim 8, line 7, --generally convex-- should be inserted between "a" and "reflector".

In claim 8, line 16, [a] should be replaced with --the--.

In claim 8, line 22, --surface-- should be inserted between "reflector" and "is".

In claim 12, line 4, [the], first occurrence, should be replaced with --an--.

In claim 12, line 6, [an], should be replaced with --the--.

In claim 13, line 2, [a] should be replaced with --the--.

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In claim 14, line 10, [integral] should be replaced with --unitary--.

In claim 14, line 14, [a] should be replaced with --the--.

In claim 14, line 15, [of] should be replaced with --in--.

In claim 16, line 4, [the], second occurrence, should be replaced with --an--.

In claim 16, line 6, [an], should be replaced with --the--.

In claim 17, line 1, --said nozzle device defining-- should be inserted between “wherein” and “the”.

In claim 17, line 2, [are defined,] should be deleted.

In claim 17, line 2, [for] should be replaced with --by--.

In claim 21, line 1, --the contour of the reflector surface is generally convex, and wherein-- should be inserted after “wherein”.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 4-6, 14, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Munz, USPN 1,964,269.

Munz discloses a sprinkler apparatus comprising: a base (13) adapted for attachment to a sprinkler and for liquid passage therethrough, a unitary nozzle device mounted on the base, the unitary nozzle device comprising an integrally formed nozzle passage (20) and an integral

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reflector surface (25) disposed in spaced-apart confronting relation, the reflector surface being disposed to be impacted by a liquid jet from the nozzle passage, the unitary nozzle device providing dimensional accuracy between the nozzle and the reflector surface to enable accurate performance of the nozzle device and accurate repeatability in manufacture of the device, means (supply conduit 11) to supply liquid under pressure to the nozzle device, the liquid jet from the nozzle passage having a generally predetermined cross-sectional configuration, the reflector surface being adapted and contoured to split the liquid jet to cause the reflected spray to be evenly distributed on both sides of predetermined area to be sprayed, the spray being of a generally predetermined cross-sectional configuration similar to the cross-sectional configuration of the liquid jet from the nozzle, whereby a spray pattern of a generally predetermined cross-sectional configuration from the reflector surface is applied to the area to be sprayed. Munz also shows the reflector surface of the sprinkler apparatus as being convex in two directions substantially at right angles to each other, wherein variations in the convex reflector surface reflect portions of the spray to respective portions of the predetermined spray pattern (see Figures 1-7).

8. Claims 1-4, 14, 15, 17, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by von Bernuth et al., USPN 4,168,033.

von Bernuth discloses a sprinkler apparatus comprising: a base (13) adapted for attachment to a sprinkler and for liquid passage therethrough, a unitary nozzle device (12) force-fitted (see column 2, lines 58-65) into an opening in the base to mount the nozzle device on the base in sealing engagement therewith, the unitary nozzle device comprising an integrally formed

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nozzle passage (25) and an integral reflector surface (27) disposed in spaced-apart confronting relation, the unitary nozzle device adapted by edge portions (28, 29, 30) thereof to be snapped-into opposed slots in an upper portion of the base to mount the nozzle device on the base (see column 4, lines 6-15), the reflector surface being disposed to be impacted by a liquid jet from the nozzle passage, the unitary nozzle device providing dimensional accuracy between the nozzle and the reflector surface to enable accurate performance of the nozzle device and accurate repeatability in manufacture of the device, means to supply liquid under pressure to the nozzle device through an open bottom end (24) of the nozzle device, the liquid jet from the nozzle passage having a generally predetermined cross-sectional configuration, the reflector surface being adapted and contoured to split the liquid jet to cause the reflected spray to be evenly distributed on both sides of predetermined area to be sprayed, the spray being of a generally predetermined cross-sectional configuration similar to the cross-sectional configuration of the liquid jet from the nozzle, whereby a spray pattern of a generally predetermined cross-sectional configuration from the reflector surface is applied to the area to be sprayed (see Figures 1-3).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Munz, in view of Applicant's specification.

Munz discloses all of the claimed elements as set forth in claim 14 and discussed above, however Munz does not teach preferably using computer equipment to create optimum geometric relations of parts, angles, and dimensions for effecting respective inclinations of spray portions for the sprinkler apparatus. On page 11, lines 6-15 of the specification of the present invention, by Applicant's own admission, "Such general procedure and computer operation are known to those versed in the art". Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine optimum geometric relations of parts, angles, and dimensions of the sprinkler apparatus of Munz, through the use of computer equipment, in order to effect optimum respective inclinations of spray portions for specific industrial applications.

11. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over von Bernuth et al., and over Munz.

Both von Bernuth and Munz disclose all of the claimed elements as set forth in claim 14, however von Bernuth and Munz each disclose their respective apparatus as being a single sprinkler apparatus, rather than a plurality of device for providing an overall composite predetermined spray area pattern. It would have been obvious to one of ordinary skill in the art at the time the invention was made duplicate each respective sprinkler apparatus of both von Bernuth and Munz to create a whole sprinkler system having a desirable overall composite predetermined spray area pattern, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Allowable Subject Matter

12. Claims 8-13 are allowed.

13. The following is a statement of reasons for the indication of allowable subject matter:

The prior art alone or in combination did not teach or fairly suggest a sprinkler apparatus having a nozzle passage of rectilinear cross-sectional configuration defined on a unitary nozzle device for impinging a liquid output jet on a generally convex reflector surface also defined on the unitary nozzle device, whereby a spray pattern of a rectilinear cross-sectional configuration from the reflector surface is applied to an area being sprayed, together with the other claimed elements as set forth in claim 8 of Applicant's invention.

14. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements specified in paragraph 5 above, or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

15. Claims 16 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents to Dey, and Thompson are cited as of interest.

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17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darren W Gorman whose telephone number is 703-306-4205.

The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Mar can be reached on 703-308-2087. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.

Darren W Gorman
Examiner
Art Unit 3752

DWG 10/6/03
DWG
October 6, 2003

Michael Mar
MICHAEL MAR
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700